SECTION 811
IMPACT ATTENUATOR

811.1 DESCRIPTION
   a. Permanent Impact Attenuator. Install the impact attenuation devices at the locations designated in the Contract Documents.

   b. Impact Attenuator (Temporary). When specified as part of project traffic control, install and relocate the temporary impact attenuation devices at the locations designated in the Contract Documents. Stockpile the required replacement modules for each type of temporary system used on the project at the project site. Install replacement modules when damaged.

<table>
<thead>
<tr>
<th>BID ITEMS</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impact Attenuator (*)</td>
<td>Each</td>
</tr>
<tr>
<td>*Type (TL-2, TL-3 or Severe Duty)</td>
<td></td>
</tr>
<tr>
<td>Impact Attenuator (Temporary)</td>
<td>Each</td>
</tr>
<tr>
<td>Replacement Modules</td>
<td>Each</td>
</tr>
</tbody>
</table>

811.2 MATERIALS
   a. Permanent Impact Attenuator. Provide the type and model of impact attenuator designated in the Contract Documents or an approved equivalent. The Bureau of Construction and Materials will maintain a list of approved impact attenuators. The Engineer will accept the impact attenuators based on the brand name and model, and visual inspection for condition at the point of usage.

   b. Impact Attenuator (Temporary). Provide the type and model of impact attenuator designated in the Contract Documents or an approved equivalent. An inertial barrier system is not an approved equivalent. The Bureau of Construction and Materials will maintain a list of approved impact attenuators. The Engineer will accept the impact attenuators based on the brand name and model, and visual inspection for condition at the point of usage.

   c. Materials for Base. Provide concrete and reinforcing steel that comply with SECTIONS 401, 402, 1102 and DIVISION 1600.

811.3 CONSTRUCTION REQUIREMENTS
   a. Permanent Impact Attenuator. Construct the reinforced concrete base according to the applicable portions of DIVISION 700 and as shown in the Contract Documents. Provide the Engineer with a printed copy of the manufacturer’s recommendations for installation of the impact attenuator. Install the impact attenuation device according to the manufacturer’s recommendations.

   b. Impact Attenuator (Temporary). Construct the reinforced concrete base according to the applicable portions of DIVISION 700 and as shown in the Contract Documents. Provide the Engineer with a printed copy of the manufacturer’s recommendations for installation of the impact attenuator. Install the impact attenuation device according to the manufacturer’s recommendations. When shown in the Contract Documents, relocate the temporary impact attenuator. Install replacement modules of the temporary impact attenuator when damaged. Unless otherwise noted in the Contract Documents, the temporary impact attenuator and replacement modules are the property of the Contractor upon completion of the project.
811 – IMPACT ATTENUATOR

811.4 MEASUREMENT AND PAYMENT

a. Permanent Impact Attenuator. The Engineer will measure each impact attenuator.
   Payment for the "Impact Attenuator (*) at the contract unit price is full compensation for the specified work.

b. Impact Attenuator (Temporary). When installed as part of project traffic control, the Engineer will measure each temporary impact attenuator. Each unit will be measured only once, even if the unit is relocated on the project.
   The Engineer will measure each replacement module used on the project. The quantity of replacement modules stockpiled on the project site, but not used on the project, will not be measured for payment.
   Payment for the "Impact Attenuator (Temporary)" and "Replacement Modules" at the contract unit price is full compensation for the specified work.